# Whitefish Trail – Phase II, Beaver Lake

## CHECKLIST ENVIRONMENTAL ASSESSMENT

MAY 2011

Photo by Brian Schott

**Montana Department of Natural Resources & Conservation**
**Northwestern Land Office - Stillwater Unit**

# CHECKLIST ENVIRONMENTAL ASSESSMENT

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| **Project Name:** | The Whitefish Trail – Phase II, Beaver Lake |
| **Proposed Implementation Date:** | Spring\Summer 2011 |
| **Proponent:** | City of Whitefish |
| **Location:** | The Beaver Lake complex, more specifically described as Sections 8, 17, 18, 19, 20, T31N, R22W. |
| **County:** | Flathead |

## I. TYPE AND PURPOSE OF ACTION

The proponent, the City of Whitefish, acting in conjunction with Whitefish Legacy Partners (WLP), has requested the Montana Department of Natural Resources and Conservation (DNRC) to grant authorization for construction and operation of Phase II of The Whitefish Trail (WT) master plan. The WT project is an amenity identified in the previously-approved Whitefish Neighborhood Plan (WNP). Through that plan, DNRC agreed to allow a window of time within which WT proponents may initiate trail development and arrange corresponding compensation to the trust that will be due because the WT project is located on trust lands.

Montana Environmental Policy Act (MEPA) review was previously conducted on the first phase of the WT project encompassing 2 trailheads and 5 miles of trail in the Skyles Lake and Lion Mountain areas *("Trails Run Through It Phase 1A EA dated 07/17/09")* and a Land Use License (LUL) was subsequently granted to the City of Whitefish for the initial WT construction.

DNRC is now conducting an additional MEPA review process specific to Phase II of the WT project which is limited to the specific trail segments as identified on Exhibit A. Granting the proposed authorization, which would require an amendment to the existing Land Use License, would meet the time frame and requirements of the WNP process, and would permit the proponent to construct and maintain a non-motorized recreation trail complex identified as "Phase II," and also provide for the day-to-day operation of that proposed trail amenity. The proposed project area is located on state trust lands in the Beaver Lake complex, more specifically described as Sections 8, 17, 18, 19, 20, T31N, R22W.

The lands involved in this proposed project are held by the State of Montana in trust for ACB (Montana State, University 2nd grant), SNS (State Normal School), PB (Public Buildings), and SM (School of Mines) per the Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11. The Board of Land Commissioners and DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions *(Section 77-1-202, MCA)*.

## II. PROJECT DEVELOPMENT

### 1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

*Provide a brief chronology of the scoping and ongoing involvement for this project.*

The MEPA for the original WT Plan encompassed numerous public comment opportunities, beginning in May of 2003 when the DNRC came to the City of Whitefish to prepare a Neighborhood Plan for state trust lands near Whitefish. Local citizens petitioned the State Board of Land Commissioners (Land Board) to charter a committee comprised of Whitefish citizens working in collaboration with the DNRC to develop the Whitefish Neighborhood Plan (WNP) for the purpose of representing the needs and values of the community. The Whitefish School trust lands Advisory committee was established and completed the WNP in October, 2004. Included in the implementation phase of the plan is the establishment of a recreation trail that loops around Whitefish Lake and the city of Whitefish.

Since that time, a planning committee for the project developed the WT Master Plan. Beginning in January, 2006, the planning committee met twice monthly through August 2006, and used the following techniques to gather public input and develop the trail plan: public meeting (130 in attendance); on-line survey (260

respondents); press releases; newspaper articles; radio and television coverage; monthly e-newsletter to 300 addresses; all-day design charette; and, field trips and tours. This plan was unveiled to the public at a public meeting on August 30, 2005. Public comments generated from that meeting were overwhelmingly positive.

An informational report was presented to the Montana Land Board at their September, 2006 meeting. Since 2006, numerous meetings and public gatherings have been held pertaining to the WT project. During the 2008-09 period, Whitefish Legacy Partners sponsored its own WT-related Open Houses on October 14, 2008 and May 5, 2009 held in the City Council chambers at the Whitefish City Hall.

Additionally, opportunities for public comment occurred during the MEPA process specific to Phase 1A which included: letters requesting comment from neighboring landowners; interested parties and agencies; legal advertisements to local papers; and, an Open House held on June 16, 2009. For MEPA requirements specific to Phase ll, Beaver Lake, the following opportunities for public comment occurred: Letters requesting comment from neighboring landowners, interested parties, and agencies were circulated on June 2, 2010. Additionally, legal advertisements for a "Request for Comments" were placed in the June 9, 2010 issue of the *Whitefish Pilot.* Approximately 14 written, verbal, and email comments were subsequently logged.

Some of the respondents (primarily neighboring landowners) expressed concern over the increased traffic and associated dust issues that would possibly incur on Beaver Lake Road if the project was implemented. Consequently, DNRC circulated a second letter on October 13, 2010 to both respondents and proponents. The letter provided an update to the current status of the project, briefly summarized the comments from the initial public scoping period, and requested suggestions for mitigation options for the dust issue on Beaver Lake Road. Approximately 3 written and e-mail comments were subsequently recorded.

## 2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Montana Department of Fish, Wildlife and Parks (DFWP) has jurisdiction over the management of wildlife in the project area.

Permits are also required from the Flathead County Environmental Health Department to authorize the installation of the proposed vault toilet.

## 3. ALTERNATIVES CONSIDERED:

**Alternative A (No Action Alternative):** Under the No Action Alternative, no activity pertaining to Phase ll would be undertaken. No related trail would be constructed and no parking lots would be built; proposed trail corridor and parking areas would remain as productive timber-harvest land. Compliance with the goals of the WT Master Plan project as laid out in the WNP would not be achieved.

**Alternative B (Action Alternative):** The Whitefish Trail - Phase ll, Beaver Lake project would be constructed to International Mountain Biking Association (IMBA) standards and operated as a mixed-use recreational trail as proposed by the proponent. The proposed trail would extend from the current kiosk location in the Beaver Lake Complex *(see Exhibit A)* and end north of Woods Lake in Section 8. One looped trail segment would be built at the south end of the trail to tie into the Skyles-Beaver section of trail. Approximately 26,300 feet (5.1 miles) of proposed trail, a parking area (0.5 acres initially and up to1.5 acres at full build out), and sanitation facilities would be constructed, with these respective areas being removed from timber production. An approximate 39" wide trail would be centered on a trail corridor approximately 5.1 miles long and generally 10' wide, but interspersed with wider trail "bulb-outs" placed approximately every thousand feet, as well as some additional intermittent width as necessary to accommodate the initial trail construction on steeper slopes. Varying portions of this trail corridor would also be removed from timber production. Some thinning of submerchantible (brush and small diameter) timber may occur up to 50' on either side of the trail, to DNRC-designated forest-management standards. Compliance with the goals of the WT Master Plan project as described in the Whitefish Neighborhood Plan would be achieved.

## III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

### 4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

*Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.*

For documentary Geology and Soils analysis of both No Action Alternative A and Action Alternative B, and proposed mitigations, please see Exhibit B.

### 5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

*Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.*

**No Action Alternative A**: No measurable direct, indirect, or cumulative impacts to water quality are anticipated.

**Action Alternative B**: The proposed trail route, overlaid on a USGS topographic map, indicated that three intermittent streams would be crossed. Field reconnaissance has verified that these features are not streams. With the apparent lack of surface water features present along the proposed trail route, the risk of adverse impacts to surface water quality would be very low and likely nonexistent. However, by incorporating the recommendations and mitigations presented in the Soil Analysis for this project *(Exhibit B),* the potential for impacts would be well managed.

### 6. AIR QUALITY:

*What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.*

**No Action Alternative A**: No measurable direct, indirect, or cumulative impacts to air quality are anticipated.

**Action Alternative B:** Direct, indirect, and cumulative impacts related to the initial trail and parking lot construction are expected to be minor and temporary, with minor particulate being released during corresponding periods of soil disturbance. Once the trail is completed, traffic on the trail and associated parking lot as well as on Beaver Lake Road (BLR), would increase intermittently and seasonally over time as public awareness and use of the WT system increases. Also, as other phases of the WT are built-out, the cumulative amount of trail use would be dispersed over the outlying segments of trail.
During the public comment period on this proposal, nearby residents expressed concern about the effects of air quality impacts due to increased traffic on BLR in their neighborhood. Additionally, there are several undeveloped residential lots also accessed by BLR that could create additional traffic and dust if they were developed. To date, local residents on BLR have not shared in cooperative dust abatement efforts.
As mitigation measures for potential impacts related to increased traffic in the area due to the WT project, the following actions would be taken by the proponent:

- With prior approval from the County and DNRC, proponent agrees to purchase and install WT trailhead directional signs on BLR. Proponent would also work with the County, after consulting with DNRC and neighboring landowners, to have additional speed limit signs installed.
- Construction of the trail is not estimated to be completed and open to public use until August 2011. Following the public opening of the trail, the proponent would be required to spot treat, with dust abatement, specific sections of BLR if DNRC deems it necessary. Proponent agrees to contribute an amount not to exceed $400.00 to spot treat dust abate in 2011.
- In the summer of 2012, proponent agrees to apply for the Flathead County Dust Control Cost Share Program. The Proponent and County would share in the cost of dust control and the proponent agrees to contribute an amount not to exceed $1,300.00 to dust abate the first half mile of BLR off Hwy 93.

- In subsequent years, if a BLR landowners group(s) initiate additional dust abatement on any portion of BLR, then the proponent agrees to contribute a pro rata share with adjacent landowners. The proponent agrees to set aside funds in a specifically designated line item account from their annual budget to be used for dust abatement and the proponent agrees to contribute an amount not to exceed $1,300.00 to dust abate any portion of BLR during years 2012-2014. The proponent is committed to working collectively with the DNRC and a BLR landowners group to determine a fair and equitable solution to dust abatement issues initiated by a BLR landowner group. This amount would be evaluated and determined during the annual review of the operating plan as required by the Land Use License.
- If a Rural Special Improvements District (RSID) is imposed upon BLR, the proponent would agree to assume the landowner's share of the RSID for the entire duration of the RSID liability, even if the period exceeds the term of the Land Use License.

This arrangement would be formalized in the Land Use License Amendment and/or other documents, as necessary.

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**7. VEGETATION COVER, QUANTITY AND QUALITY:**

*What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.*

**Existing Condition:**

The corridor of the area where trail work is proposed runs through topography that is glacially-influenced with predominantly broken ground that includes cliffs, draws, ridges and benches. The corridor would travel through elevations generally ranging from approximately 3,400 feet to just over 3,700 feet. The forest productivity is rated moderate to high. Areas with shallower soils or drier south aspects commonly contain Douglas fir, lodgepole pine, and occasionally ponderosa pine in the forest canopy. The moister, more productive sites contain species such as grand fir, western larch, subalpine fir, Engelmann Spruce and several hardwoods. Common species of ground cover include dwarf huckleberry, wild sarsaparilla, twinflower, sweet scented bedstraw and queen cup beadlily. The trail corridor would go through many stands of varying age classes, stand structures, and cover types. Stocking levels in these stands are also extremely variable. Past disturbance in the area includes an active history of timber harvesting, wildfires, and substantial dispersed recreational use. Noxious weeds in the area include spotted knapweed, orange and yellow hawkweed and tansy ragwort. Most weeds occur in small spotty populations.

**DIRECT AND INDIRECT EFFECTS TO VEGETATION:**

With the No Action Alternative A, no new trail work would be authorized. No additional forest land would be taken out of timber production. The existing unauthorized trails in the area would likely continue to be used and a moderate increase in use over time may occur consistent with the area's population growth. Current uses of the area would continue with the potential of increased recreation in the future. The potential for the spread of noxious weeds would remain, and may increase over time with increased recreational use.

With the Action Alternative B, activities such as pruning trees, removing downfall and hazardous trees, and clearing the trail tread of ground cover and other small areas adjacent to the trail that would be used for signs and benches would directly affect vegetation in these areas. The effect to vegetation would occur on a narrow, confined area and the overall vegetation in the general area would not be affected. The exposed areas would have a greater risk of weed infestation. Authorization of the proposed trail would remove 6.2 acres from timber production and, over time, possibly substantially increase the recreational use of the area. Consequently, there is a risk that more unauthorized trails could be constructed, which would spread more noxious weeds and remove additional acreage from timber production. Potential effects to vegetation include increased opportunity for weed spread, human-caused fires, and creation of unauthorized trails. Mitigation measures outlined in the WT Operating Plan and elsewhere in this document are designed to address these effects.

**CUMULATIVE EFFECTS TO VEGETATION:**

**Cumulative Effects of No Action Alternative A:**

Ongoing increased dispersed recreation, past harvesting and road construction in the area have resulted in impacts. These impacts include additional weed infestations and removal of forest acreage to become part of a

road system. Current timber sales *(Beaver/Swift/Skyles Timber Sale Project EA)* are planned in the area of the proposed trail, and have been designed by DNRC to have a long-term positive effect on forest growth, vigor, and desired species mix. Additional areas of exposed soil would be created by these projects and would increase the risk of the spread and establishment of noxious weeds. Increased weed management is often implemented with timber sale projects, greatly offsetting the effect, or providing a net benefit.

**Cumulative Effects of Action Alternative B:**
Potential cumulative effects to vegetation include increased soil area exposed to weed infestation since the area would receive additional public access and use under recreation management.

Another effect related to the construction of WT is likely to be an increase in the cost and time of managing current and future timber sales in the area, due to increased complications of arranging logging activities around a recreational corridor. Past harvesting and road construction in the area have impacted vegetation by allowing additional weed infestations and by removing some acreage from the forest which become part of a road system. Current timber sales *(Beaver/Swift/Skyles Timber Sale Project EA)* are planned in the area of the proposed trail, and have been designed to have a positive effect on forest growth, vigor, and desired species mix. Additional areas of exposed soil would be created by these projects and would increase the risk of the spread and establishment of noxious weeds. Increased weed management is often implemented with timber sale projects, greatly offsetting the effect. Managing the trail system in the area under the Land Use License and Draft Operating Plan would lead to identification and reclamation of problem areas on trails, as well as increased public information that would provide details on how to use the trail responsibly in order to reduce the spread of noxious weeds, unauthorized trails, and human-caused fire. With the proposed increase in management, the trail may become more confined and better maintained, therefore mitigating potential negative effects to vegetation.

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**8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:**
*Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.*

For Terrestrial, Avian, and Aquatic Life and Habitats analyses of both No Action Alternative A and Action Alternative B, and proposed mitigations, please see Exhibit C.

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**9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:**
*Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of Special Concern. Identify cumulative effects to these species and their habitat.*

For Unique, Endangered, Fragile, or Limited Environmental Resources analysis of both No Action Alternative A and Action Alternative B, and proposed mitigations, please see Exhibit C.

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**10. HISTORICAL AND ARCHAEOLOGICAL SITES:**
*Identify and determine effects to historical, archaeological or paleontological resources.*

No measurable direct, indirect, or cumulative impacts are anticipated for either No Action Alternative A or Action Alternative B.

No known historical features are associated with this land. Should historical archeological or cultural features be discovered during construction, work in that area will be suspended until the site can be properly evaluated.

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**11. AESTHETICS:**
*Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.*

No measurable direct, indirect, or cumulative impacts to aesthetics are anticipated with No Action Alternative A.

With Action Alternative B, the proposed trail is anticipated to increase the access to positive aesthetic opportunities and scenic locations. Due to the generally undulating nature of the topography, the trail may be visible to neighboring landowners in a few specific locations; however, no measurable effect is anticipated in the area's view shed.

A parking area (0.5 acres initially and up to1.5 acres at full build-out), and sanitation facilities would be constructed at the current kiosk location when entering state land from Beaver Lake Road. The parking area, associated kiosk with signage and vaulted toilet would be visible to those traveling from Beaver Lake Road unto state land, and vice versa.

**12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:**

*Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.*

No measurable direct, indirect, or cumulative impacts on resources of land, water, air or energy are anticipated with either No Action Alternative A or Action Alternative B.

**13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:**

*List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

• July 17, 2009 Checklist EA for the Trail Runs Through It Phase 1A.

• April 2009, Beaver/Swift/Skyles Timber Sale Environmental Assessment.

• February 2, 2009 Decision Memo, USDA/Forest Service for "A Trail Runs Through It Project," Flathead National Forest, Tally Lake Ranger District.

• Whitefish Neighborhood Plan, adopted in 2006.
The Whitefish Neighborhood Plan was adopted by the DNRC. The same plan was adopted by the City of Whitefish and Flathead County as the growth policy for their respective jurisdictional areas. Implementation Strategy 2.1 of the Whitefish Neighborhood Plan is to "Create a Regional Loop Trail." The proposal is anticipated to address the second phase of a growing trail system that would eventually establish a longer-term land use authorization.

- September 2005, Beaver/Murray Lake Area Nordic Skiing EA Checklist.

## IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

**14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

Beaver Lake Road-Use Related Effects:

**Existing Condition:**
Beaver Lake Road (BLR) is a Flathead County gravel road approximately 1 ½ miles long from Highway 93 to the state boundary. Based on information shown on the county CAD map, it appears there are approximately 38 different landowners who directly utilize BLR as primary access to their property. Road use by landowners influences the generation of dust on this county road, prior to the point at which it enters state trust land from the south.

The state trust lands accessed by Beaver Lake Road have traditionally been a high-use recreation area, due to close proximity with the City of Whitefish, the lakes and forested property available for recreational pursuits in the Beaver Lake area. Growth in the Flathead Valley has also resulted in substantially increased use of outdoor recreation locations such as the Beaver Lake area. The trust lands in this area are classified Forest Land, and are regularly managed to provide ongoing revenue to the trust beneficiary and to maintain desired forest conditions.

**ENVIRONMENTAL EFFECTS:**

***Direct and Indirect Effects to Health and Human Safety***

**No Action Alternative A:** A moderate related increase in use of BLR may occur over time consistent with the area's population growth.

**Action Alternative B:** Adjacent landowners would experience some adverse effects pertaining to the increased use of BLR. Increased use of the road might lead to increased violation of road regulations (speeding, parking) and dust/air quality impacts especially in the first quarter mile of road accessed off Hwy 93. Neighbors are concerned that the BLR presently receives inadequate county maintenance attention, and fear that additional use may further degrade the road. Area residents are also concerned about the potential for dust and air pollution generated by increased use of BLR. In addition, there are several undeveloped private properties accessed by the BLR. Their potential development and subsequent use of BLR may also contribute to the adverse effects experienced by those currently living in the neighborhood.

Several mitigations for these effects were identified and are listed below:

- The proponent has agreed that WT will participate fairly with landowners in mitigating road issues associated with increased road use. If the proposed project is authorized, DNRC would also include a stipulation for such participation in the proponent's LUL amendment.
- Work with Flathead County and neighboring landowners to determine current and future use of BLR to assist in diligence for the road agreement (as authorized through the LUL Amendment and/or associated document). Work with the County and neighboring landowners on a plan for better control of the existing road to include; additional signage, speed control and dust abatement/air quality.

As use of BLR by the proposed trail's users increases over time, the proposed mitigation measure are expected to offset many of the adverse impacts anticipated by neighboring property owners and others. In particular, the proponent proposes to share fairly in road use mitigation measures, and would be required by DNRC to do so. As a County road, BLR is a designated access for both the neighboring private parcels as well as the state trust lands parcel. It is possible that development of the project area may result in some increased risk to health and human safety in terms of increased use of BLR, however, the above listed mitigation measures are expected to reduce such risk. Assuming the complete list of mitigation measures is implemented, direct and indirect effects to health and human safety are expected to be minor.

**CUMULATIVE EFFECTS:**

Current and proposed projects that may affect Health and Human Safety within the cumulative effects analysis area include the Beaver/Swift/Skyles Timber Sale Project. Timber harvesting and road building in the identified areas are slated to occur in conjunction with these projects.

**No Action Alternative A:** There would be less opportunity for interface between timber harvest operations, and recreationalists in the area using BLR. Some risks to human health and safety may be reduced given that the area would be signed and restricted during the harvest process, as well as other mitigations being applied to reduce the risk to health and human safety.

**Action Alternative B:** There would be increased opportunity for interface between timber harvest activities and recreationalists using BLR. In addition, the area would be signed and restricted during the harvest process, in addition to other mitigation measure that would be applied to reduce the risk to health and human safety; therefore, cumulative effects to health and human safety are expected to be fairly minimal.

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**15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**
*Identify how the project would add to or alter these activities.*

No measurable direct, indirect, or cumulative impacts to industrial, commercial and agricultural activities are anticipated with either No Action Alternative A or Action Alternative B.

**16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

*Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.*

No measurable direct, indirect, or cumulative impacts are anticipated for No Action Alternative A.

It is anticipated that at least one seasonal or year-round trails management position plus limited seasonal construction jobs would be created by the implementation of Action Alternative B.

**17. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

*Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.*

No measurable direct, indirect, or cumulative impacts to local and state tax base and revenues are anticipated with either No Action Alternative A, or Action Alternative B.

**18. DEMAND FOR GOVERNMENT SERVICES:**

*Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services*

Currently, No Action Alternative A requires some law enforcement efforts when unauthorized use or violations occur within the project area. Although it would be difficult to measure, it is anticipated that unauthorized use of the area is likely to increase with population growth, as it is located in an urban interface area.

With implementation of Action Alternative B, recreational use of the area would be anticipated to gradually increase over time, therefore, traffic patterns would also likely to increase on BLR that would provide access to the trailhead.

The planning and construction of the proposed trail system and the project coordinator position are being funded by earmarked donations, though the City of Whitefish or a WT subcontractor may occasionally need to provide snow-plowing of the parking areas during the winter months if warranted by sufficient trail-use. Increased presence of law-abiding public users may curtail the opportunities for violators. Implementation of the WT Operating Plan, and the trail monitoring and publication education proposed therein, may also reduce the number of violations and law enforcement response required to the area.

**19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:**

*List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.*

**Whitefish Neighborhood Plan, adopted in 2006.**

The Whitefish Neighborhood Plan was adopted by the DNRC. The same plan was adopted by the City of Whitefish and Flathead County as the growth policy for their respective jurisdictional areas. Implementation Strategy 2.1 of the Whitefish Neighborhood Plan is to "Create a Regional Loop Trail." The proposal is anticipated to address the second phase of a growing trail system that would eventually establish a longer-term land use authorization.

**20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:**

*Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.*

**Existing Condition:** The Beaver Lake project area, which contains lakes, forests, old and new logging roads, and skid trails, is a prime area for recreation. The primary dispersed recreational uses include hunting, fishing, hiking, berry picking, horseback riding, firewood gathering, bicycling, and camping. With the exception of the DFWP boat ramp on Beaver Lake, the project area has no developed recreation sites such as day-use areas or

overnight camping. Some undeveloped sites do exist along roads and near lakes throughout the project area. These sites usually consist of rock fire rings and/or small openings for tents.

Many of the existing trails in the project area are old skid trails; however, over time these trails have been further developed by hunters, hikers, mountain bikers, horseback riders, and motorized recreational vehicles, without the knowledge of, or input from, DNRC management.

Other recreation uses through leases and licenses in the project area include: the Beaver Lake boat launch; cabin site leases around Beaver Lake; and groomed Nordic ski trails.

**Direct, Indirect and Cumulative Effects on Recreational Activities:**

**No Action Alternative A**
A moderate increase in dispersed recreational use over time would occur, consistent with the area's population growth. As funds become available, recreational improvements to existing undeveloped campsites would continue. It is probable that there could be a corresponding risk of increased noxious weed-spread, littering and garbage problems, diminished privacy, human-caused fires, and trespass/vandalism to trust land and neighboring property. The existing unauthorized trails in the area would likely continue to be used.

**Action Alternative B**
Adjacent landowners and others may experience adverse effects pertaining to the proposed trail's construction, and the maintenance, use, and associated activities. Possible adverse effects include; increased spread of noxious weeds, littering and garbage problems, diminished privacy, human-caused fires, and trespass/vandalism to neighboring property. If the trail is not monitored, policed, and maintained, unauthorized use and violations in the area could increase. While a formal trail system would increase the overall use of the area, active management of the trail use is expected to increase the access to, and quality of, recreational use.

Mitigation measures were developed to offset many of the adverse effects and include:

- The proposed trail route has been specifically engineered and professionally designed to minimize potential mixed-use conflicts, minimize illegal motorized trail use, and provide for safe recreational use.. Trail design is consistent with the industry standards developed by IMBA for sustainable trail design and multi-use or shared-use systems, and encompasses design features such as reduced grade percentages to facilitate adequate stopping for bikers, avoiding blind corners and thinning trail corridor vegetation to maintain lines of sight so various users can see each other, and providing for multiple "pull-outs" along the trail for users to pass one another or stop and rest along the trail.
- Signage would be installed at trailheads and along the trail to inform users about trail-use safety, procedures, etiquette, and other pertinent information.
- The proposed trail route has been positioned to minimize proximity to neighboring private land and to preserve personal privacy. Signage will be designed to educate trail users and discourage trespassing.

  Boundary-specific signage is planned for those segments that are nearer to private property and the WT Steering Committee may also provide signage for interested landowners to place along their boundaries, if desired.
- A volunteer force would be organized by the WT Steering Committee/WT coordinator and provides for both parking lot steward responsibilities as well as a bike patrol. The parking lot steward would assist the project coordinator in maintaining trailheads and parking areas, including picking up garbage, checking restrooms for cleanliness and supplies, providing information to visitors, and reporting vandalism. The bike patrol would ride the trail individually or in teams, providing education and assistance to other trail users. Although the patrol would not provide law enforcement, it would provide visitor assistance, monitor illegal trail activity such as motorized use or unauthorized trail building, and would make note of trail hazards that require maintenance or mitigation.
- Abiding by the Montana County Noxious Weed Management Act, Mont. Code Ann., 7-22-2101, *et seq.* would be required. DNRC would approve method of control with the minimum requirement being a spring treatment of weeds in the trail corridors during the rosette stage by a certified applicator.

**21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.*

No measurable impact to density and distribution of population and housing is anticipated under either No Action Alternative A or Action Alternative B.

**22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

No measurable disruption of social structures is anticipated as a result of either No Action Alternative or Action Alternative B.

Action Alternative B would formalize the use of an area traditionally used by the community for recreation.

**23. CULTURAL UNIQUENESS AND DIVERSITY:**

*How would the action affect any unique quality of the area?*

No impact to cultural uniqueness and diversity is anticipated as a result of either No Action Alternative A or Action Alternative B.

**24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:**

*Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.*

Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimate of return for timber production is determined by calculating the annual sustained yield per acre within the Whitefish Neighborhood Plan Beaver/Swift subunit, multiplying that value by the 5-year average stumpage rate, and then multiplying that value by the acres within the Zone boundaries. The estimate of return for the proposed trail would be the trail fee-per-mile charge. The estimate of return for the proposed trailhead is based on land values obtained during the issuance of the Land Use License currently in effect. This economic analysis is based on the Beaver Lake segment of trail and associated trailheads and does not include the revenue generated over the entire Land Use License currently if in effect.

Currently, classified-forest trust lands in the Beaver/Swift subunit generate average timber revenue of approximately $52.00 per acre, per year. The proposed trail corridor licensing area of Action Alternative B encompasses approximately 8 acres. While timber harvest would be authorized to continue in some portions of the trail corridor, the amount of timber harvested within the previously-cleared trail corridor is likely to be negligible. Effectively, up to approximately 8 acres may be removed from timber production, totaling an annual decline in timber revenue for the project area at a value of approximately $416.00 per year. Conversely, the recreation revenue generated by Action Alternative B, as outlined in the current Land Use License, would be (at the base fee of $200/mile of trail) at least $1,240.00 per year, and the trailhead (calculated at approximately $0.16357 per square foot) would be $356.25 initially and could be as much as $1068.75 with full build out of the trailhead.

It should be noted, however, that future timber sales in the surrounding area would likely bear an increased cost (e.g., added restrictions on the timber sale contract in turn increasing the cost to the potential purchaser) due to management issues involved in working around and accommodating recreational trails threading through the sale area.

No Action Alternative A would leave the proposed trail corridor in timber production and potentially produce approximately $416.00 in average annual per-acre return (without incurring increased costs due to trail-based management issues), however, there would be no annual recreation revenue generated on that same property as provided for in Action Alternative B.

| EA Checklist Prepared By: | Name: Nicole Stickney | Date: 04/28 /2011 |
|---|---|---|
| | Title: Special Uses Forester | |

## V. FINDING

### 25. ALTERNATIVE SELECTED:

Upon review of The Whitefish Trail – Phase II, Beaver Lake Checklist EA, and associated documents, I find Action Alternative B, as proposed, meets the intent of the project objectives as stated in *Section I – Type and Purpose of Action*. Action Alternative B is designed for the construction and operation of Phase II of The Whitefish Trail. The WT project is an amenity identified in the previously approved Whitefish Neighborhood Plan. The trail project is being implemented to provide for a high quality recreational experience for non-motorized use in close proximity to the Whitefish community. Action Alternative B would be implemented in a way that addresses the concerns that were identified with the project, including but not limited to the following :

- **Design:** The trail will be built to meet International Mountain Biking Association (IMBA) standards and operated as a mixed-use recreational trail as proposed by the proponent. The trail is designed to provide adequate drainage to avoid erosion or water quality impacts; control speed; provide signage and information as needed; and is located to avoid long excessive steep side slope construction and unnecessary travel through riparian areas.
- **Management:** The trail will be operated under a Land Use License that requires an operating plan which is updated annually. The operating plan requires monitoring and maintenance of trail conditions as well as the management of trailheads and associated amenities such as vaulted toilets, kiosks, public information and litter control.
- **Long Term Commitments:** The proponents are committed to long term solutions for dust control on the Beaver Lake Road (*page 3 Air Quality*); weed maintenance and public involvement. The proponents schedule a public trail meeting annually to provide the opportunity for trail users and neighbors to discuss concerns and recommendations.

### 26. SIGNIFICANCE OF POTENTIAL IMPACTS:

After a review of the project file; scoping documents; project design; this Checklist Environmental Assessment; and, Department policies, standards and guidelines; I find that all of the identified resource management concerns have been fully addressed. Specific project design features and various recommendations of the resource management specialists have been implemented to ensure that this project will fall within the limits of acceptable environmental change. No project activities are being conducted on important fragile or unique sites. In summary, I find that the identified adverse impacts will be controlled, mitigated, or avoided by the design of the project to the extent that the impacts are not significant.

### 27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

| | | | | | |
|---|---|---|---|---|---|
| ☐ | EIS | ☐ | More Detailed EA | X | No Further Analysis |

| EA Checklist Approved By: | Name: Brian Manning | |
|---|---|---|
| | Title: Unit Manager, MT DNRC Stillwater Unit | |
| Signature: /s/ Brian Manning | | Date: 5/11/2011 |

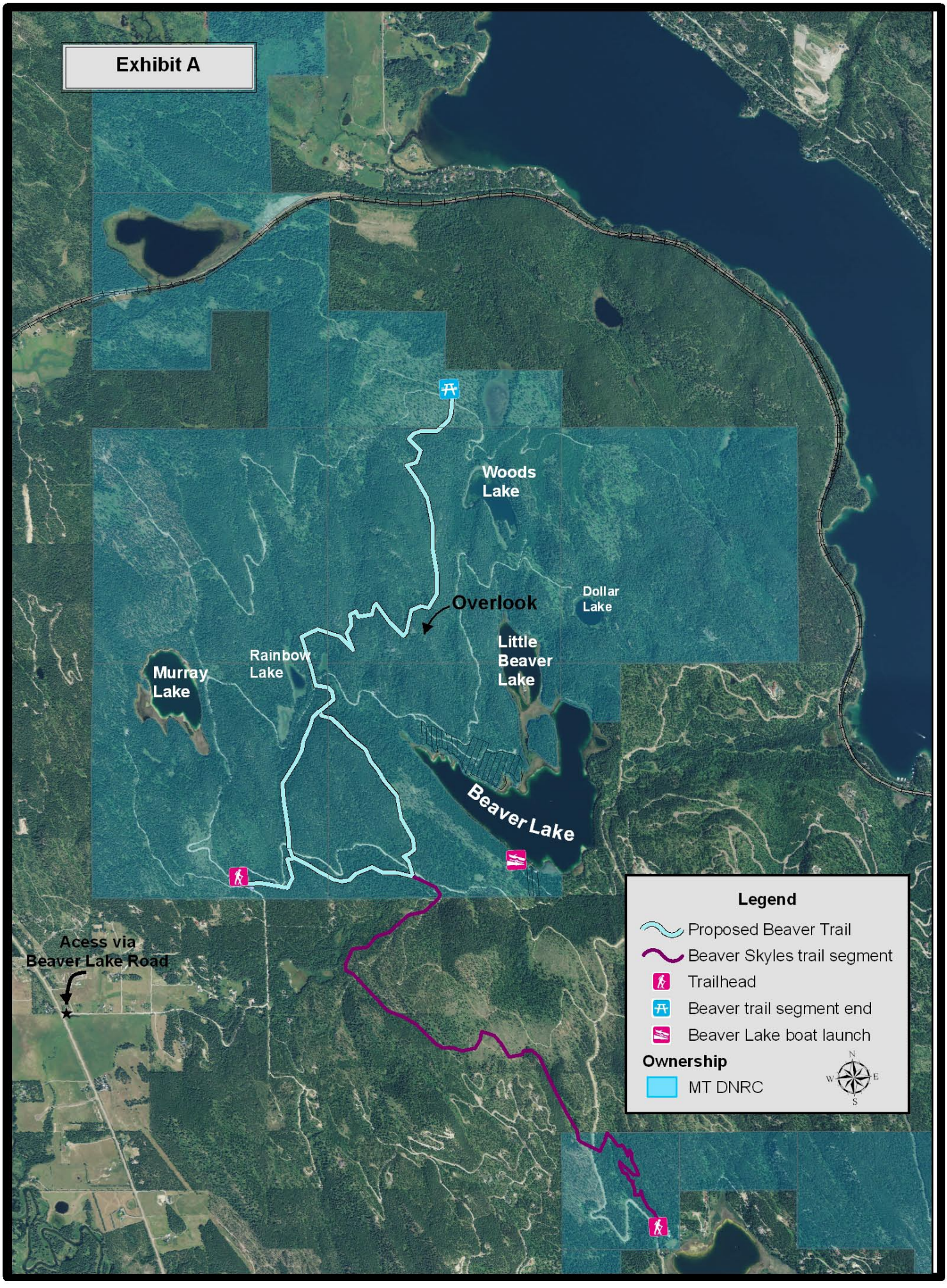
Exhibit A
Woods Lake
Overlook
Dollar Lake
Little Beaver Lake
Rainbow Lake
Murray Lake
Beaver Lake
Acess via Beaver Lake Road
Legend
Proposed Beaver Trail
Beaver Skyles trail segment
Trailhead
Beaver trail segment end
Beaver Lake boat launch
Ownership
MT DNRC
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# EXHIBIT B
# SOIL RESOURCES

### *Introduction*

This analysis is designed to disclose the existing condition of the soil resources and display the anticipated effects that may result from each alternative of this proposal. During the initial stages of the project, issues were identified by the public or agency personnel regarding soil impacts. The following issue statements were condensed from public comments regarding the possible effects of proposed actions:

- Additional use on existing and proposed trails may result in increased erosion.
- Increasing the number of trails in the area will remove land from forest production.

### *Analysis Area*

The direct and indirect impact analysis area for soil impacts will be the proposed trail route. The cumulative effects analysis area is approximately 3,780 acres. This area includes DNRC managed land in Sections 7 (south of railroad tracks), 8,16,17,18,19,20 and 21 of Township 31N, R22W. This analysis area will adequately allow for disclosure of existing conditions, direct, indirect and cumulative impacts of land removed from timber production in the Beaver Lakes Area.

### *Analysis Methods*

Methods for disclosing impacts include using general soil descriptions and the management limitations of the landtype, then qualitatively assessing the risk of erosion for each alternative. To adequately address the loss of land from forest production, the area within the trail corridor will be assumed to have been removed from production.

While the anticipated impacts from each alternative will disclose the direct/indirect effects, the cumulative impacts will be the result of previous and proposed activities.

## Existing Conditions

### *Increased Erosion*

In order to determine the risk of erosion for the proposed trails, a basic inventory of soil and landtypes in the analysis area was reviewed using the Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (NCSS) Web Soil Survey. The proposed trail would be located on a single landtype which covers the majority of the state trust land ownership in the Beaver Lakes Area. The landtype is symbolized as ’23-8’ and described as glaciated mountainsides on 20 to 40 percent slopes. The soils are formed in glacial till and support a wide variety of vegetation from a moist, mixed forest to a dry, mixed forest. Due to the coarse texture of the soil, this landtype is well drained, to very well-drained.

The erosion hazard for these soils is based on *Erosion Factor K* which indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water *(NRCS Web Soil Survey).* The K value for the whole soil profile (*Kw*) is 0.32 for Landtype 23-8. This would indicate that erosion hazard is moderate.

### *Area removed from timber production*

The majority of the DNRC managed land within the analysis area has been harvested since logging first began in 1919. While some of these skid trails and roads are still discernable, vegetation similar to the surrounding vegetation is generally present and growing. Due to the freeze-thaw cycles and root mass penetrating the soil, impacts from past entries are substantially reduced. Adverse compaction and displacement impacts from past logging are estimated to cover less than 10% of the analysis area. *(DNRC, 2009).* Although production is reduced on the impacted portion of the analysis area, timber production is still present.

On classified forest land, DNRC strives to maintain soil productivity by limiting cumulative soil impacts to 15 percent or less of a harvest area, as noted in the State Forest Management Plan (*DNRC, 1996*). As a recommended goal, if existing detrimental soil effects exceed 15 percent of an area, proposed harvesting should minimize any additional impacts. Harvest proposals on areas with existing soil impacts in excess of 20 percent should avoid any additional impacts and include restoration treatments, as feasible, based on site-specific evaluation and plans.

Areas removed from timber production in the analysis area are generally as a result of roads, hiking trails, parking lots or buildings. Cumulative effects from past and current uses include roads, driveways, cabin sites. The area taken out of production for roads and cabin site improvements is estimated at 51 acres (1.3% of analysis area). An additional area of 24 acres in cutslopes and fill slopes adjacent to roads is considered to be substantially reduced for timber production.

## Environmental Effects

### *Description of Alternatives*

#### *No Action Alternative*

No activity pertaining to the Beaver Lakes portion of The Whitefish Trail would be undertaken. No related trail would be constructed and no parking lots and access roads would be built; proposed trail corridor and parking/road areas would remain as productive timber-harvest land. Existing recreation activities would continue.

#### *Action Alternative*

The Whitefish Trails project—Beaver Lakes Area would be constructed to International Mountain Biking Association (IMBA ) standards and operated as a mixed-use recreational trail as proposed by the proponent. The proposed trail would extend from a trailhead at the southernmost property line on the Beaver Lake Road northward to the switchback on the North Murray Road. A 39" wide trail is proposed to be centered on a trail corridor approximately 5.1 miles long and generally 10' wide, but interspersed with wider trail "bulb-outs" placed approximately every 1,000 feet, as well as some additional intermittent width as necessary to accommodate the initial trail construction on steeper slopes. This corridor would essentially be removed from timber production. Of the proposed route that is approximately 26,900 feet in length (5.1 miles), an estimated 1,385 feet would be located on abandoned/reclaimed roads.

In addition to the trail corridor, the proponents would construct various amenities (parking, vault toilet, kiosk, etc) at a trailhead area that could encompass up to 1.5 acres at full build out. A second trailhead would be located at the north end of the proposed trail. This second trailhead would be small (~.25 acres) and would have a picnic table as the only amenity.

## *Direct and Indirect Effects*

### *No Action Alternative*

If this alternative were selected, continued use of the area would not change from the existing condition. Erosion problems would not be identified or repaired. An authorized trail system would not be constructed; therefore no additional ground would be removed from timber production.

### *Action Alternative*

**Loss of timber production**

Under the action alternative approximately 26,900 feet of trail would be constructed in the Beaver Lakes area. Approximately 1,385 feet of the proposed trail would be located on reclaimed road prisms. While these areas are currently considered to be producing timber due to past impacts from compaction and displacement, these areas have been reclaimed and future production is expected. Trail width would generally be 39 inches wide although the trail corridor would be 10 feet wide and would be removed from timber production. This assumption is consistent with the Trail Runs Through It-Phase IA Environmental Analysis *(DNRC 2009a).*

The total area removed from timber production due to the trail corridor would be approximately 6.2 acres and includes 5.1 miles of trail corridor. Additionally, an estimated 1.75 acres would be removed from production for amenities at trailheads such as parking, vault toilets, informational signs and picnic tables.

**Increased Erosion**

As vegetation reduces erosion potential by holding soil with roots and by filtering runoff with above ground vegetation, the risk of erosion would increase under this alternative. Erosion potential would be the highest during construction and for an estimated two years post-construction.

The estimated volume of material excavated from the trail prism and dispersed on the downhill side of the trail would be 1,829 cubic yards. Steeper areas would result in larger quantities of waste material while flatter areas would be less. Calculations indicate that excavation of a 39 inch trail on a 30% side slope would generate approximately 1.8 cubic feet of material for every foot of trail constructed.

Because no streams are located near the proposed trail, the risk of adversely impacting water quality would be very low. However, the wasted material would provide a good seedbed for weeds.

Trails would be constructed and maintained according to the International Mountain Biking Association's standards and principles found in Trail Solutions; IMBA's Guide to Building Sweet Singletrack and Managing Mountain Biking: IMBA's Guide to Providing Great Riding. While bared soil and increased use typically results in additional erosion and wear, proper design and maintenance coupled with the well-drained soil would reduce the potential erosion on the trails. As part of the Land Use License, erosion control measures would be required and therefore the risk of erosion would be lessened.

To further reduce the risk of erosion; the following mitigations would be required:

- Backslopes (cutslopes) must be at a stable angle.
- Wasted material must be spread depths that would not inhibit existing vegetation.
- Depositing waste material within a draw is prohibited. Additionally, wasted material should not be placed in a location that could facilitate erosion to a draw.
- Bare soil must be seeded within 7 days to stabilize soils and reduce the risk of weed infestations.

- Drainage must be maintained at all times on the trails.
- Limit trail use during wet periods

By implementing erosion control measures on existing trails and following these mitigation recommendations, the risk of unacceptable impacts would be low.

## *Cumulative Effects to Timber Production and Soils*

### *No Action Alternative*

No additional loss of timber productivity would result from the implementation of this alternative.

Cumulative effects to soils under the no action alternative include continued erosion from the current uses. Erosion control measures would be implemented as needed in the future as part of a timber sale or other proposed actions.

### *Action Alternative*

Under the action alternative, an additional 6.2 acres (0.2% of analysis area) of land would be removed from timber production. This would increase the cumulative loss of productivity to an estimated 57.6 acres or 1.5% of the analysis area.

Erosion potential would be increased, especially during construction and for an estimated two years following construction would be increased, mainly due to the loose soil deposits in waste areas and unvegetated cutslopes. After the waste areas and unvegetated cutslopes stabilize the erosion potential would be reduced, although it would remain higher than the No Action alternative due to the loss of vegetative cover on the trail prism. No cumulative impacts to water quality from erosion would be expected due to the lack of streams near the proposed trail location.

# References

DNRC, 1996. State Forest Land Management Plan. Montana Department of Natural Resources and Conservation. Missoula, MT

DNRC, 2009. Beaver/Swift/Skyles Timber Sale Project Environmental Assessment. Montana Department of Natural Resources and Conservation, Northwestern Land Office, Kalispell and Stillwater Units.

DNRC, 2009a. Trail Runs Through It Phase 1A Environmental Assessment. Montana Department of Natural Resources and Conservation, Kalispell Unit, Kalispell, MT. 23pp.

Martinson, A.H. and Basko, W.J. 1998. Soil Survey of Flathead National Forest Area, Montana. USDA Forest Service, Region 1, Flathead National Forest. Kalispell, MT. 206 pp.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/ accessed February 2011.

# EXHIBIT C
# WILDLIFE ANALYSIS

# Exhibit C WILDLIFE ANALYSIS

## Introduction

This analysis is designed to disclose the existing condition of the wildlife resources and display the anticipated direct, indirect, and cumulative effects that may result from each alternative of this proposal. During the initial scoping, the following wildlife issues were identified from internal and external comments regarding the effects of proposed trail construction, maintenance, and use:

- The proposed trail construction, maintenance, use, and associated activities could increase disturbance to wildlife in the vicinity, which could alter wildlife use of the project area.
- The proposed trail use and associated activities could generate conflicts between users (and their pets) and the wildlife inhabiting the area.
- The proposed trail use and associated activities could generate litter and garbage, which could attract wildlife species and/or habituate wildlife species creating potential for increased conflicts.
- The proposed trail construction, maintenance, use, and associated activities could alter cover, increase access, and reduce secure areas, which could adversely affect grizzly bears by displacing grizzly bears from important habitats and/or increasing risk to bears of human-caused mortality.
- The proposed trail construction, maintenance, use, and associated activities could displace gray wolves from important habitats, particularly denning and rendezvous sites and/or alter prey availability.
- The proposed trail construction, maintenance, use, and associated activities could alter potential habitats for pileated woodpeckers and/or increase disturbance to pileated woodpeckers.
- The proposed trail construction, maintenance, use, and associated activities could reduce the amount and/or quality of fisher habitats, which could alter fisher use of the area and/or alter potential mortality due to trapping.
- The proposed trail construction, maintenance, use, and associated activities could disturb big game species and/or alter the effectiveness of their habitats.

### *Analysis Area*

The discussions of existing conditions and environmental effects will focus on 2 different scales. The first will be the 'project area', which consists of approximately 1,805 acres of DNRC-managed lands in Sections 7, 8, 17, 18, 19, and 20, T31N, R22W. The second scale or the *cumulative effects analysis area (CEAA)* relates to the surrounding landscape for assessing cumulative effects to wildlife species and their habitats. The scales of these analysis areas vary according to the species being discussed, but generally approximate the size of the home range of the discussed species.

### *Analysis Methods*

DNRC attempts to promote biodiversity by taking a 'coarse-filter approach', which favors an appropriate mix of stand structures and compositions on state lands. Appropriate stand structures are based on ecological characteristics (e.g., landtype, habitat type, disturbance regime, unique characteristics). A coarse-filter approach assumes that if landscape patterns and processes are maintained as similar to those with which the species evolved, the full complement of species would persist and biodiversity would be maintained. This coarse-filter approach supports diverse wildlife populations by managing for a variety of forest structures and compositions that approximate historic conditions across the landscape. DNRC cannot assure that the coarse-filter approach will adequately address the full range of biodiversity; therefore, DNRC also employs a 'fine-filter' approach for threatened, endangered, and sensitive species. The fine-filter approach focuses on a single species' habitat requirements.

To assess the existing condition of the proposed project area and surrounding landscape, a variety of techniques were used. Field visits, scientific literature, SLI data, aerial photographs, Montana Natural Heritage Program (MNHP) data, and consultations with other professionals provided information for the following discussion and effects analysis. Specialized methodologies are discussed under the species in which they occur. Species were dismissed from further analysis if habitat did not exist in the project area or would not be modified by any alternative. Past and current activities on all ownerships in each analysis area, as well as planned future agency actions, have been taken into account for the cumulative-effects analysis.

## Coarse Filter Wildlife Analysis

Of the 108 mammal species found in Montana, 66 are suspected or known to occur in Flathead County (*Foresman 2001*). The majority of terrestrial vertebrates that were present at the time of European settlement likely still occur in the vicinity of the proposed project area. Six amphibian and seven reptile species have also been documented in Flathead County (*Maxell et al. 2003*) and at least 65 species of birds have been documented in the vicinity in the last 10 years (*Lenard et al. 2003*). Terrestrial species that rely on special habitat elements, such as white bark pine (*Pinus albicaulis*), western white pine (*Pinus monticola*), or burned areas, may not be present or may occur in lower abundance due to the decline of these elements across the landscape. Over time, due to fire suppression, tree densities have increased and shade-tolerant species, such as Douglas-fir and grand fir, have become more prevalent than they were historically. These departures probably benefit wildlife species that rely on shade-tolerant tree species and/or closed-canopy habitats, while negatively affecting species that rely on shade-intolerant tree species and/or open habitats. However, in the vicinity of the project area, the forests are a mosaic of mature stands, which benefit species relying on mature forests, and regenerating forests, benefiting wildlife species that use early seral stages either exclusively or seasonally. Past timber harvesting that led to the early seral stages has likely reduced the quality and quantity of snags and coarse woody debris compared to historical conditions, reducing habitat for those wildlife species that require these components.

### *Wildlife Habitat Altered With Human Access*

**Issue:** The proposed trail construction, maintenance, use, and associated activities could increase disturbance to wildlife in the vicinity, which could alter wildlife use of the project area.

**Issue:** The proposed trail use and associated activities could generate conflicts between users (and their pets) and the wildlife inhabiting the area.

**Issue:** The proposed trail use and associated activities could generate litter and garbage, which could attract wildlife species and/or habituate wildlife species creating potential for increased conflicts.

### *Introduction*

Increasing human access into wildlife habitats creates the potential for interactions between wildlife and humans. Humans can disturb or displace wildlife, attract wildlife, and/or get into conflicts with wildlife. Disturbance of wildlife by humans may elicit short-term or long-term behavioral (avoidance, habituation, or attraction) and/or physiological (affecting an individual's energy budget or population productivity) responses in wildlife (*Joslin and Youmans 1999*). Extensive research has focused on the behavioral and/or physiological effects of human disturbance on groups of wildlife, including large carnivores, ungulates, birds, and even small mammals. Low level behavioral effects can include mild disturbance of individuals or interference with foraging or other life requisites. More detrimental behavioral effects can include abandoning habitat, habituation to human activities, and potentially mortality of individuals from habituation. Physiological effects can frequently be more subtle and may include a host of changes internally that are energetically costly to an individual or the population as a whole; physiological effects can include the energetic cost of moving away from the disturbance, to elevated heart rates while being disturbed, or increased stress associated with changing situations. Several factors influence the behavioral response of the various species of wildlife to human disturbance, including the type of disturbance,

distance to the disturbance, speed, frequency, magnitude, and location of disturbance. Furthermore, these disturbance factors infrequently affect only the narrow trail corridor, but rather extend some distance out into the adjacent habitats and can affect the wildlife in that wider area. This is of particularly importance when recreationalists bring dogs with them since dogs extend the zone of influence around the trail, especially when not on a leash, since dogs can disrupt wildlife activities, alarm individuals, chase, injure, or even kill wildlife. Collectively, facilitating increases in human activities within wildlife habitats increases the potential for elevated wildlife disturbance.

Similarly, wildlife conflicts are negative interactions between wildlife and humans that largely stem from humans encroaching on wildlife habitats or wildlife becoming adapted to using human developed landscapes (*Woodroffe et al. 2005*). Generally, the 2 common types of conflicts include interactions that can pose a danger to human safety (aggressive or defensive conflicts) or those that cause damage to property (nuisance conflicts). Human safety concerns largely stem from wildlife species that have the ability to defend themselves (and subsequently pose a danger to humans) from attack/intrusion, such as mountain lions, bears, and wolves. Increased human access places more people in wildlife habitats, which can increase the potential for aggressive or defensive wildlife\human conflicts.

Meanwhile, some wildlife can be attracted to humans and/or the associated refuse/garbage/litter as a source of easily accessible source of food. Individuals of some species of wildlife can become a nuisance when habituated to artificial food sources that humans introduce. Litter from food items brought while recreating that may not be properly removed, introducing foods sought by humans (e.g. sweet, salty, etc) to wildlife. This conditioning of wildlife to human foods can lead to nuisance wildlife conflicts. Even when litter/trash/refuse is properly cared for, receptacles that are not wildlife resistant could allow certain wildlife to access the trash and become habituated to eating human garbage/litter. These refuse receptacles can then become not only an attractant, but may also become a primary source of food. Unfortunately, food-conditioned wildlife are not easily separated from human garbage, and this condition can frequently lead to management death of the individuals that are conditioned.

## *Analysis Area*

Direct and indirect effects were analyzed on the project area. Cumulative effects were analyzed on the 17,834-acre cumulative-effects analysis area defined later in the grizzly bear section. This scale includes enough area to support numerous individuals of many of the species of resident wildlife in the vicinity. Additional specifics on the potential for disturbance to grizzly bears, gray wolves, and big game can be found in the fine filter section.

## *Analysis Methods*

Direct, indirect, and cumulative effects to potential human disturbance levels, wildlife attractants, and potential for wildlife/human conflicts were assessed using field evaluations and aerial-photograph interpretation. Factors considered in the analysis include the level of human access, risk of disturbance and displacement of wildlife, potential for conflicts with wildlife, and the likelihood of introducing wildlife attractants.

## *Existing Environment*

The project area currently experiences moderate levels of disturbance to resident wildlife in the form of recreational hiking, snowshoeing, boating and fishing, biking, firewood gathering, and recreational hunting. Human access in the project area is moderate, with the project area being reasonably close to the City of Whitefish and has numerous open roads. The ongoing logging associated with the Beaver/Swift/Skyles Timber Sale Project is introducing some short duration, high intensity disturbance to wildlife in the vicinity. Those activities may also be increasing the effective sight and sound distances at which wildlife in the vicinity are affected when other disturbance regimes are in the area. For example, with the more open stands created by the logging, deer may move away from a hiker at a greater distance because the sight, sound, or smell could travel further than if the stand had not been thinned. In the project area or immediately outside of the project area, FWP reported human conflicts with black bears and

mountain lions in the past. Black bears (*Ursus americanus*) and mountain lions (*Felis concolor)* likely use the project area during portions of the year and occasional use by grizzly bears is also possible. Seasonal concentrations of prey species (i.e. big game) can also attract some of these wildlife species to an area, which could facilitate wildlife/human conflicts; numerous big game winter ranges exist in the project area (see *WILDLIFE ANALYSIS—BIG GAME WINTER RANGE*). Moderate levels of human use have the potential for moderate levels of wildlife attractants being introduced to the area. Numerous species of wildlife, including black bears, grizzly bears, ravens (*Corvus corax*), raccoons (*Procyon lotor*), and several species of small mammals occurring in the area are known to become habituated to human attractants across their ranges. Attractants occur in the project area, and largely stem from human users improperly disposing of litter.

In the cumulative-effects analysis area, disturbance due to human developments (including agricultural areas, private developments, extensive road network including Highway 93, parts of the City of Whitefish, including a major golf course, etc.), open water, and general recreational use (e.g. Spencer mountain bike trails, etc.) is relatively high. Human access, via numerous roads and the varied ownership patterns, is quite high, facilitating this level of human disturbance. Ongoing harvesting on DNRC-managed lands and private ownership is introducing some short duration, high intensity disturbance to wildlife. Additionally other longer-term developments are introducing more permanent disturbance to wildlife in the cumulative-effects analysis area, including residential development, roads, and permanent alterations to forested stands. Habitats for wildlife that are frequently involved with wildlife/human conflicts, such as black bears, mountain lions, grizzly bears, and wolves are common in the cumulative-effects analysis area. FWP reported at least 25 wildlife/human conflicts in the cumulative-effects analysis area in the recent past, including conflicts with grizzly bears, black bears, and mountain lions. Winter range for white-tailed deer, mule deer, elk, and moose exist in the cumulative-effects analysis area, which can attract some of these same species commonly involved in wildlife/human conflicts. In the cumulative-effects analysis area, numerous species of wildlife exist, including black bears, grizzly bears, ravens, raccoons, and several species of small mammals that are known to become habituated to human attractants. A host of attractant sources occur in the cumulative-effects analysis area that are tied to human use areas, such as roads, houses, agricultural fields, and an existing trash receptacle compound that may all provide food sources for wildlife and/or concentrate wildlife.

## *Environmental Effects*

**Direct and Indirect Effects of the No-Action Alternative on wildlife habitats due to changes in human access**

No changes to human access would occur. Existing levels of human disturbance and displacement would likely continue into the future. Existing potential for wildlife/conflict would not change. No changes to existing potential for humans introducing wildlife attractants would occur. No appreciable changes to wildlife use of the project area would be anticipated. Thus, no direct or indirect effects to wildlife from disturbance would be anticipated since: 1) no further disturbance or displacement would be expected; 2) no changes to human access would occur; 3) no changes to the potential for wildlife/human conflict would occur; 4) no changes to the potential introduction of wildlife attractants would occur; and 5) no changes to existing stands in the project area would occur.

**Direct and Indirect Effects of the Action Alternative on wildlife habitats due to changes in human access**

Human access would increase in the project area. Roughly 5.1 miles of additional non-motorized access would facilitate mountain biking, hiking, running, and equestrian uses, all which may further disturb wildlife in the project area. Elevated disturbance levels would likely cause some wildlife to abandon the area, some wildlife would be habituated to the use, and some would likely alter their use patterns to avoid the disturbance. Collectively, a reduction in use of the area by certain wildlife would be anticipated given the elevated human access and disturbance. In general, the additional human access could increase the potential for wildlife/human conflicts in the project area. The increased human access would also facilitate the introduction of wildlife attractants to the project area, which could habituate resident wildlife. Incorporating suggested mitigations, including user education (keeping away from wildlife/ no feeding of wildlife, and pack out litter), encouraging dog owners to control their

dogs on the trail, and the use of bear/wildlife resistant trash receptacles would reduce the overall potential for disturbing, displacing, attracting, or habituating wildlife and would reduce the potential for wildlife/human conflicts. A small amount of dry coniferous forested habitats would be removed with the trail construction and the development of the various amenities at the trailheads, but these reductions would not appreciably alter the availability of these habitats in the project area. Thus, moderate adverse direct and indirect effects to wildlife from disturbance would be anticipated since: 1) human access would increase to the area; 2) human disturbance levels and potential for displacement would be elevated in the project area; 3) the potential for wildlife/human conflicts would increase in the project area; 4) the potential for introduction of wildlife attractants would increase; and 5) no appreciable changes to existing stands in the project area would occur.

**Cumulative Effects of the No-Action Alternative on wildlife habitats due to changes in human access**

No further changes to human access in the cumulative-effects analysis area would be anticipated. Existing levels of human disturbance and displacement would likely continue in the future. No appreciable changes to wildlife use of the project area would be anticipated. Overall the potential for wildlife/human conflicts would not change. Wildlife attractants in the cumulative-effects analysis area would not appreciably change. Thus, no further cumulative effects to wildlife from disturbances would be anticipated since: 1) no further disturbance or displacement would be expected; 2) no changes to human access would occur; 3) no changes to the potential for wildlife/human conflicts would occur; 4) no changes to the potential introduction of wildlife attractants would occur; and 5) no further changes to existing stands in the cumulative-effects analysis area would occur.

**Cumulative Effects of the Action Alternative on wildlife habitats due to changes in human access**

Elevated human access on roughly 5.1 miles of non-motorized trail would contribute to the overall high levels of human access in the cumulative-effects analysis area. Disturbance from non-motorized use of the trail by mountain bikers, hikers, and horse-back riders would further disturb wildlife in the cumulative-effects analysis area. A reduction in use of the cumulative-effects analysis area by some species would be anticipated and an increase in others that may be habituated or attracted to these areas could occur. Some displacement of wildlife species commonly involved with wildlife/human conflicts could occur in other portions of the cumulative-effects analysis area; ongoing activities across the cumulative-effects analysis area may also be displacing some of these same species into other portions of the cumulative-effects analysis area, potentially including the project area. Overall, with an increase in human use of the cumulative-effects analysis area, a slight increase in wildlife/human conflicts could occur. Elevated human use could lead to an overall increase in wildlife attractants in the area. Incorporating suggested mitigations in the project area would reduce the overall potential for disturbing, displacing, attracting, or habituating wildlife while reducing the potential for wildlife\human conflicts in a small portion of the cumulative-effects analysis area. A small amount of dry coniferous forested habitats would be removed with the trail construction and the development of the various amenities at the trailheads, but these reductions would not appreciably alter the availability of these habitats in the cumulative-effects analysis area. Thus, minor to moderate cumulative effects to wildlife from disturbances would be anticipated since: 1) human access would increase to the cumulative-effects analysis area; 2) levels of human disturbance would be further elevated and the potential for displacement would be increased in the cumulative-effects analysis area; 3) the potential for wildlife/human conflicts would be increased; 4) the levels of wildlife attractants could increase in the cumulative-effects analysis area would; and 5) negligible changes to existing stands in the cumulative effects analysis area would occur.

## Fine-Filter Analysis

In the fine-filter analysis, individual species of concern are evaluated. These species include wildlife species listed as threatened or endangered under the *Endangered Species Act of 1973*, species listed as sensitive by DNRC, and species managed as big game by DFWP. ***TABLE W-1 – FINE FILTER*** summarizes how each species considered was included in the following analysis or removed from further analysis because suitable habitat does not occur in the project area or proposed activities would not affect their required habitat components.

**TABLE W-1–FINE FILTER. Status of species considered in the fine-filter analysis for this proposed project.**

| SPECIES/HABITAT | DETERMINATION – BASIS |
|---|---|
| ***THREATENED AND ENDANGERED SPECIES*** | |
| Grizzly bear (*Ursus arctos*)<br>Habitat: Recovery areas, security from human activity. | The project area is in the "occupied habitat" as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones (*Wittinger, 2002*). |
| Canada lynx (*Felis lynx*)<br>Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone. | The project area occurs outside of the elevations and habitat types where lynx are commonly found in Montana. A limited amount of lynx habitats were identified in the project area; however these lynx habitats would be away from the areas that could be affected by any of the proposed activities. The project area is outside of the recently designated 'critical habitat' area as identified by the USFWS. Thus, no direct, indirect, or cumulative effects to Canada lynx would be expected under either alternative. |
| Gray Wolf (*Canis lupus*)<br>Habitat: Ample big game populations, security from human activities. | The project area includes portions of the annual home ranges for the Lazy Creek wolf pack. |
| ***SENSITIVE SPECIES*** | |
| Bald eagle *(Haliaeetus leucocephalus)*<br>Habitat: Late-successional forest more than 1 mile from open water. | The proposed project area is partially within the home range associated with the Whitefish Lake bald eagle territory. However, given the distance to the existing nest, the anticipated negligible changes in human disturbance levels in the home range, the distance from any lakes or streams, and the habitats present, no direct, indirect, or cumulative effects to bald eagles would be expected to occur as a result of either alternative. |
| Black-backed woodpecker *(Picoides arcticus)*<br>Habitat: Mature to old burned or beetle-infested forest. | No recently (less than 5 years) burned areas are in the project area. Thus, no direct, indirect, or cumulative effects to black-backed woodpeckers would be expected to occur as a result of either alternative. |
| Coeur d'Alene salamander *(Plethodon idahoensis)*<br>Habitat: Waterfall spray zones, talus near cascading streams. | No moist talus or streamside talus habitat occurs in the project area. Thus, no direct, indirect, or cumulative effects to Coeur d'Alene salamanders would be expected to occur as a result of either alternative. |
| Columbian sharp-tailed grouse *(Tympanuchus Phasianellus columbianus)*<br>Habitat: Grassland, shrubland, riparian, agriculture. | No suitable grassland communities occur in the project area. Thus, no direct, indirect, or cumulative effects to Columbian sharp-tailed grouse would be expected to occur as a result of either alternative. |
| Common loon *(Gavia immer)*<br>Habitat: Cold mountain lakes, nests in emergent vegetation. | Loons have nested on Boyle and Beaver lakes in the past and have been observed on Little Beaver, Murray, and Whitefish Lake in the past. However proposed trail construction, maintenance, and use would be no closer than 1,000 feet of any lakes normally used by nesting loons, thus no direct, indirect, or cumulative effects to common loons would be expected to occur as a result of either alternative. |
| Fisher *(Martes pennanti)*<br>Habitat: Riparian, and dense mature to old forest less than 6,000 feet in elevation. | Potential fisher habitats occur in the project area. |

| SPECIES/HABITAT | DETERMINATION – BASIS |
|---|---|
| Flammulated owl (*Otus flammeolus*)<br>Habitat: Late-successional ponderosa pine and Douglas-fir forest. | Although a few small, scattered pockets of suitable dry Douglas-fir exist in the project area, no suitable dry ponderosa pine stands exist in the project area. Additionally, the size and scattered nature of these isolated pockets of habitat would not support a pair of flammulated owls. Use of the project area by flammulated owls would not be expected given the matrix of habitats in the area. Thus, no direct, indirect, or cumulative effects to flammulated owls would be expected to occur as a result of either alternative. |
| Harlequin duck (*Histrionicus histrionicus*)<br>Habitat: White-water streams, boulder and cobble substrates. | No suitable high-gradient streams occur in the project area. Thus, no direct, indirect, or cumulative effects to harlequin ducks would be expected to occur as a result of either alternative. |
| Northern bog lemming (*Synaptomys borealis*)<br>Habitat: Sphagnum meadows, bogs, fens with thick moss mats. | No suitable sphagnum bogs or fens occur in the project area. Thus, no direct, indirect, or cumulative effects to northern bog lemmings would be expected to occur as a result of either alternative. |
| Peregrine falcon (*Falco peregrinus*)<br>Habitat: Cliff features near open foraging areas and/or wetlands. | No suitable cliffs/rock outcrops occur in the project area. Thus, no direct, indirect, or cumulative effects to peregrine falcons would be anticipated as a result of either alternative. |
| Pileated woodpecker(*Dryocopus pileatus*)<br>Habitat: Late-successional ponderosa pine and larch-fir forest. | Mature western larch/Douglas-fir and mixed-conifer habitats exist in the project area. |
| Townsend's big-eared bat (*Plecotus townsendii*)<br>Habitat: Caves, caverns, old mines. | A potentially suitable cave/tunnel is located in the project area, but is over a mile from proposed activities. Thus, no direct, indirect, or cumulative effects to Townsend's big-eared bats are anticipated as a result of either alternative. |
| ***BIG GAME SPECIES*** | |
| Big game winter range. | White-tailed deer, mule deer, elk, and moose winter range exists in the project area. |
| Elk security habitat. | No elk-security habitat exists in the project area and no large blocks of security habitat exist that contribute to a larger block of elk security habitat outside of the project area. Thus, no direct, indirect, or cumulative effects to elk security habitat would be anticipated as a result of either alternative. |

# Threatened and Endangered Species

## Grizzly Bear

**Issue:** The proposed trail construction, maintenance, use, and associated activities could alter cover, increase access, and reduce secure areas, which could adversely affect grizzly bears by displacing grizzly bears from important habitats and/or increasing risk to bears of human-caused mortality.

### *Introduction*

Grizzly bears are native generalist omnivores that use a diversity of habitats found in western Montana. Preferred grizzly bear habitats are meadows, riparian zones, avalanche chutes, subalpine forests, and big game winter ranges, all of which provide seasonal food sources. Primary habitat components in the project area include meadows, riparian areas, and big game winter ranges. Primary threats to grizzly bears are related to human-bear conflicts, habituation to unnatural foods near high-risk areas, and long-term habitat loss associated with human development (*Mace and Waller 1997*). Forest-management activities may affect grizzly bears by altering cover and/or by increasing access to humans into secure areas by creating roads (*Mace et al. 1997*). These actions could lead to the displacement of grizzly bears from their preferred areas and/or result in an increased risk of human-caused mortality by bringing humans and bears closer together and/or making bears more detectable, which can increase the risk of bears being illegally shot. Displacing bears from their preferred areas may increase their energetic costs, which may, in turn, lower their ability to survive and/or reproduce successfully.

## Analysis Area

Direct and indirect effects were analyzed for activities conducted in the project area. Cumulative effects were analyzed on the 17,834-acre portion of the "occupied habitat" area that is east and north of Highway 93, west of Whitefish Lake, and south of the Lazy Creek Subunit of the North Continental Divide Ecosystem.

## Analysis Methods

Field evaluations, aerial-photograph interpretation, and the GIS analysis were the basis for this analysis. Open-road densities were calculated using a simple linear calculation method. Factors considered in the analysis include the amount of the area with open-road densities greater than 1 mile per square mile, the amount of available security habitat, and availability of timbered stands for hiding cover.

## Existing Environment

The project area is outside of the North Continental Divide Ecosystem Recovery Area and the "occupied habitat" area as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones (*Wittinger, 2002*). Grizzly bears have not been documented in the project area, but use is possible.

Grizzly bears generally use different habitats relative to season. The project area could provide a combination of habitats for grizzly bears throughout the nondenning period. Potential habitats in the project area include the lower elevation riparian areas and big game winter ranges.

Managing human access is a major factor in management for grizzly bear habitat. Open-road densities (which include high use trails) are rather high in the project area (2.8 miles per square mile, simple linear calculation), which is similar to the larger, cumulative-effects analysis area which has high open road densities (2.8 and 3.4 miles/square mile, depending on the class of roads on private ownerships; simple linear calculation). No security core exists in the project area or cumulative-effects analysis area. Hiding cover in the project area has been reduced with past timber management and ongoing timber harvesting, but some hiding cover persists the project area. Within the cumulative-effects analysis area, the Beaver/Swift/Skyles and Lupfer #3 timber sale projects would continue altering grizzly bear habitats and/or human disturbance levels in the cumulative-effects analysis area. Harvesting and human disturbance would continue on other ownerships in the cumulative-effects analysis area; ongoing recreational use across all ownerships would continue to provide a source of disturbance to grizzly bears.

## Environmental Effects

**Direct and Indirect Effects of the No-Action Alternative on Grizzly Bears**

No direct effects to grizzly bears would be expected. No changes to the level of disturbance to grizzly bears would be anticipated. No changes in security core, open-road densities, or hiding cover would be anticipated. Thus, no direct or indirect effects to grizzly bears would be anticipated since: 1) no disturbance or displacement would be expected, 2) no changes in hiding cover would occur, 3) security habitat would not be altered, and 4) no changes in long-term open-road densities would be anticipated.

**Direct and Indirect Effects of the Action Alternative on Grizzly Bears**

This alternative might affect grizzly bears directly through increased noise and human activity. Activities in grizzly bear habitats reduce grizzly bear security, possibly resulting in increased stress and/or energy expenditure to endure the disturbance or to move from the area. Trail construction, maintenance, and use would likely disturb grizzly bears should they be using the area. No changes to security core habitats and negligible changes to grizzly bear hiding cover would be anticipated with the anticipated clearing along the trail and the development of the various

amenities at the trailheads. No changes to motorized human access would occur since no new roads would be constructed or opened to motorized access. However, long-term use of roughly 5.1 miles of trails in the project area would increase open-road densities (which includes high-use trails) in the project area from 2.8 miles per square mile (simple linear calculation) to 3.6 miles per square mile (simple linear calculation). Incorporating suggested mitigations, including user education, encouraging dog owners to control their dogs on the trail, and using bear/wildlife resistant trash receptacles would reduce the overall potential for disturbing, displacing, attracting, or habituating grizzly bears and would reduce the potential for grizzly bear\human conflicts. Thus moderate adverse direct or indirect effects to grizzly bears would be anticipated since: 1) elevated human access could facilitate increased human disturbance and displacement of grizzly bears; 2) no changes to hiding cover would be anticipated; 3) security habitats would not be affected; and 4) long-term open road densities would be elevated across the project area.

**Cumulative Effects of the No-Action Alternative on Grizzly Bears**

Access to the area, security habitats, and hiding cover would all remain unchanged. No changes to existing forested stands in the cumulative-effects analysis area would be expected. Human disturbance levels would be expected to continue into the future at fairly similar levels. No changes to existing security habitats would be anticipated. Any potential disturbance and habitat modification associated with ongoing timber harvesting would continue. Thus no further adverse cumulative effects to affect grizzly bears would be anticipated since: 1) no changes in human disturbance levels would be expected; 2) no changes to hiding cover would occur; 3) no changes to security habitats would be anticipated; and 4) no changes to open road densities would occur.

**Cumulative Effects of the Action Alternative on Grizzly Bears**

The increased use of the trail in the project area would increase human disturbance to grizzly bears in a portion of the cumulative-effects analysis area. The additional human disturbance and potential for displacement of bears in the cumulative-effects analysis area would be additive to ongoing timber harvesting. Grizzly bears would be expected to continue using the cumulative-effects analysis area at similar levels as currently being used. Reductions in available habitats would be additive to the reductions from past and ongoing timber harvesting as well as more permanent land-cover changes in the cumulative-effects analysis area; however, appreciable amounts of the cumulative-effects analysis area are currently providing hiding cover and suitable habitats. No changes to existing security habitats would be anticipated. Open-road densities would be elevated to between 3.0 and 3.5 miles per square mile (from 2.8 to 3.4 miles per square mile, depending on class of roads on private ownerships, simple linear calculation) in the cumulative-effects analysis area. Incorporating suggested mitigations, including user education, encouraging dog owners to control their dogs on the trail, and using bear/wildlife resistant trash receptacles would reduce the overall potential for disturbing, displacing, attracting, or habituating grizzly bears and would reduce the potential for grizzly bear\human conflicts. Thus, minor to moderate adverse cumulative effects to grizzly bears would be expected since: 1) moderate increases in human disturbance levels would be expected; 2) no appreciable changes to hiding cover would be expected; 3) no changes to security habitats would be expected; and 4) open road densities would be increased in the cumulative-effects analysis area.

## *Gray Wolf*

**Issue:** The proposed trail construction, maintenance, use, and associated activities could displace gray wolves from important habitats, particularly denning and rendezvous sites and/or alter prey availability.

### Introduction

The gray wolf was listed as 'endangered' under the Endangered Species Act in the northern portion of Montana, which includes the project area. The gray wolf was de-listed on March 28, 2008; however, a preliminary injunction (July 18, 2008) led to the re-listing of wolves in this area as "endangered." Following the injunction, the USFWS requested the Court allow them to voluntarily withdraw its decision to delist wolves and re-evaluate information

and make a new decision, which was granted (October 14, 2008). The USFWS then de-listed the gray wolf (May 4, 2009), and a recent federal ruling (August 8, 2010) re-instated the Endangered classification for gray wolves under the Endangered Species Act. To meet the delisting criteria, the 3 recovery areas need to support a minimum of 30 breeding pairs for 3 consecutive years. The 3 recovery areas have met the recovery objectives for breeding pairs since 2000. In 2009, 115 of the 242 documented packs in the tri-state region met the definition of a 'breeding pair'(*USFWS et al. 2010*). Of those 115 packs, 37 occurred in Montana, with 23 of those found in the northern Montana portion of the recovery area, along with 41 additional packs that didn't meet the requirements to be considered a 'breeding pair' (*Sime et al. 2010*).

Wolves are a wide-ranging, mobile species that occupy a wide range of habitats that possess adequate prey and minimal human disturbance, especially at den and/or rendezvous sites. The Lazy Creek wolf pack has been in the vicinity for at least the last 9 years, and has contained a breeding pair counted toward the recovery goals for 3 of the last 5 years. The home range for this pack is variable and has included portions of the project area in numerous years (*USFWS et al. 2010*).

Wolves are opportunistic carnivores that frequently take vulnerable prey (including young individuals, older individuals, and individuals in poor condition). In general, wolf densities are positively correlated to prey densities (*Oakleaf et al. 2006, Fuller et al. 1992*). In northwest Montana, wolves prey primarily upon white-tailed deer and, to a lesser extent, elk and moose (*Kunkel et al. 1999*). However, some studies show that wolves may prey on elk more frequently during certain portions of the year (particularly winter) or in areas where elk numbers are higher (*Arjo et al. 2002, Kunkel et al. 2004, Garrott et al. 2006*). Thus, reductions in big game populations and/or winter range productivity could indirectly be detrimental to wolf populations.

Wolves typically den during late April in areas with gentle terrain near a water source (valley bottoms), close to meadows or other openings, and near big game wintering areas. When the pups are 8 to 10 weeks old, wolves leave the den site and start leaving their pups at rendezvous sites while hunting. These sites are used throughout the summer and into the fall. Disturbance at den or rendezvous sites could result in avoidance of these areas by the adults or force the adults to move the pups to a less adequate site. In both situations, the risk of pup mortality increases. No wolf den or rendezvous sites are known to be in the project area; however, landscape features frequently associated with these sites occur in the project area. Wolves may be using the vicinity of the project area for hunting, breeding, and other life requirements.

## *Analysis Area*

Direct and indirect effects were analyzed for activities conducted in the project area. Direct and indirect effects were analyzed for activities conducted within the project area. Cumulative effects were analyzed on the 17,834-acre cumulative-effects analysis area defined in the grizzly bear section. This area approximates the annual home range in size and includes roughly half of the 2008 annual home range for the Lazy Creek wolf pack.

## *Analysis Methods*

Portions of the analysis are tied to the big game winter range section since changes in winter range could have a sizable effect on the availability of prey for wolves. Meanwhile, disturbance at den and rendezvous sites are important during certain portions of the year, and the timing of proposed activities in relation to these sites is also important. Direct and indirect, as well as cumulative effects, were analyzed using field evaluations, aerial-photograph interpretation, and a GIS analysis of habitat components. Factors considered in the analysis include the amount of winter range modified, and the level of human disturbance in relation to any known wolf dens or rendezvous sites.

## *Existing Environment*

Big game species are fairly abundant in the project area and considerable amounts of big game winter range (see the *WILDLIFE ANALYSIS—BIG GAME WINTER RANGE* section for compete details) exist in the project area. Numerous landscape features commonly associated with denning and rendezvous sites, including meadows and openings, big game winter range, and several water sources, also occur in the project area. Wolves from the Lazy Creek wolf pack have been documented in the vicinity of the project area in the past and would be expected to continue using the area into the future. No known den or rendezvous sites occur in the project area. Wolves may be using the vicinity of the project area for hunting, breeding, and other life requirements.

Within the larger cumulative-effects analysis area, big game species are abundant and big game winter range exists across most of the project area. Numerous landscape features commonly associated with denning and rendezvous sites, including meadows and other openings near water and in gentle terrain, occur in the cumulative-effects analysis area. The known den site and the suspected rendezvous sites for this wolf pack occurs on private ownership in the vicinity and not in the project area (*K. Laudon, DFWP, personal communication, September 18, 2008).* In the past, wolves from the Lazy Creek wolf pack have utilized a fairly large portion of the cumulative-effects analysis area and would be expected to continue using this area into the future. Past harvesting on all ownerships has altered big game and wolf habitats. Similarly, ongoing harvesting associated with Beaver/Swift/Skyles and Lupfer #3 timber sale projects are altering big game habitats in the cumulative effects analysis area; however, all of these activities would be expected to have minor effects to wolves and/or their prey.

## *Environmental Effects*

**Direct and Indirect Effects of the No-Action Alternative on Gray Wolves**

Disturbance to wolves would not increase. No changes in big game habitat, including no changes to big game winter ranges, would be expected during the short-term; therefore, no changes in wolf prey availability would be anticipated. Wolf use of the project area would be expected to continue at current levels. Thus, no direct and indirect effects would be expected to affect gray wolves in the project area since: 1) no changes in human disturbance levels would occur; and 2) no changes to big game winter range would occur.

**Direct and Indirect Effects of the Action Alternative on Gray Wolves**

Trail construction, maintenance, and use could disturb gray wolves should they be using the area; wolves are most sensitive at den and rendezvous sites, which are not known to occur in the project area. Elevated human disturbance levels would likely reduce potential gray wolf use into the future, particularly for den and rendezvous sites. Additionally, proposed trail construction, maintenance, and use could also lead to shifts in big game use, which could lead to a shift in wolf use of the project area. Negligible changes to big game winter attributes would be anticipated with the trail construction and maintenance; increased human disturbance associated with the trail usage could reduce habitat quality of the winter range in the vicinity of the trail. Thus, minor direct and indirect effects would be expected to affect gray wolves since: 1) moderate long-term increases in human disturbance levels would occur, with no increases near known wolf den and/or rendezvous sites anticipated; and 2) minor changes to big game winter ranges would occur.

**Cumulative Effects of the No-Action Alternative on Gray Wolves**

White-tailed deer, mule deer, and elk winter ranges would not be affected and substantive changes in big game populations, distribution, or habitat use would be not anticipated. Levels of human disturbance would be expected to remain similar to present levels. Ongoing harvesting may cause shifts in white-tailed deer use and, subsequently, gray wolf use, of the cumulative-effects analysis area; however, no changes would be anticipated that would alter levels of gray wolf use of the cumulative-effects analysis area. No changes in human access would be anticipated. Thus, no further cumulative effects would be expected to affect gray wolves since: 1) no changes in human

disturbance levels would occur, particularly near known wolf den and/or rendezvous sites; and 2) no changes to big game winter ranges would occur.

**Cumulative Effects of the Action Alternative on Gray Wolves**

Negligible changes to existing winter range habitats would be anticipated. Some slight shifts of big game use may occur in a portion of the cumulative effects analysis area. Elevated human-disturbance levels would be anticipated in a small portion of the cumulative effects analysis area. No substantive change in wolf use of the cumulative-effects analysis area would be expected; wolves could continue to use the area in the long-term. Thus, negligible cumulative effects would be expected to affect gray wolves since: 1) elevated human disturbance levels would be anticipated, but would not be anticipated near known wolf den and/or rendezvous sites; and 2) minor changes to big game winter range would occur.

# Sensitive Species

# Fisher

**Issue:** The proposed trail construction, maintenance, use, and associated activities could reduce the amount and/or quality of fisher habitats, which could alter fisher use of the area and/or alter potential mortality due to trapping.

## Introduction

Fishers are a mid-sized forest carnivore whose prey includes small mammals such as voles, squirrels, snowshoe hares, and porcupines, as well as birds (*Powell and Zielinski 1994*). They also take advantage of carrion and seasonally available fruits and berries (*Foresman 2001*). Fishers use a variety of successional stages, but are disproportionately found in stands with dense canopies (*Powell 1982, Johnson 1984, Jones 1991, Heinemeyer and Jones 1994*) and avoid openings or young forested stands (*Buskirk and Powell 1994*). However, some use of openings may occur for short hunting forays or if sufficient overhead cover (shrubs, saplings) is present. Fishers appear to be highly selective of stands that contain resting and denning sites and tend to use areas within 150 feet of water (*Jones 1991*). Resting and denning sites are found in cavities of live trees and snags, downed logs, brush piles, mistletoe brooms, squirrel and raptor nests, and holes in the ground. Forest-management considerations for fisher involve providing for resting and denning habitats near riparian areas while maintaining travel corridors.

**Analysis Area**

Direct and indirect effects were analyzed for activities conducted in the project area. Cumulative effects were analyzed on the 17,834-acre cumulative-effects analysis area defined in the grizzly bear section. This scale includes enough area to approximate overlapping home ranges of male and female fishers (*Heinemeyer and Jones 1994*).

**Analysis Methods**

To assess potential fisher habitat and travel cover on DNRC-managed lands in the cumulative-effects analysis area, sawtimber stands within preferred fisher cover types (*ARM 36.11.403(60)*) below 6,000 feet in elevation with 40 percent or greater canopy closure were considered potential fisher habitat. Fisher habitat was further divided into upland and riparian-associated areas depending on the proximity to streams and based upon stream class. Effects were analyzed using field evaluations, GIS analysis of potential habitat, and aerial photograph interpretation. Factors considered include amount of suitable fisher habitats, landscape connectivity, and human access.

## *Existing Environment*

The project area ranges from 3,040 to 4,000 feet in elevation, with approximately 2.4 miles of Class 2 streams in the project area. DNRC manages preferred fisher cover types within 100 feet of Class 1 and 50 feet of Class 2 streams, so that 75 percent of the acreage (trust lands only) would be in the sawtimber size class in moderate to well-stocked density (*ARM 36.11.440[1][b][i]*). Modeling fisher habitats using SLI data generated an estimate of 2,088 acres of fisher foraging, resting, denning, and travel habitats (2,075 upland acres and 13 riparian acres) in the project area (*Heinemeyer and Jones 1994*). Within the riparian areas, all of the preferred fisher cover types (13 of 13 acre) are moderately or well-stocked and likely support the structural features necessary for use as fisher resting and denning habitats in addition to serving as travel habitats and maintaining landscape connectivity.

Within the cumulative effects analysis area, roughly 434 acres are within 100 feet of the 11 miles of Class 1 streams and 50 feet of the 13 miles of Class 2 streams. Within the riparian habitats on DNRC-managed lands, roughly 92.4 percent (157 of 170 acres) of the area in preferred fisher cover types presently provides structural features necessary for use as fisher resting and denning habitats. Additionally, roughly 4,568 acres of upland fisher habitats exist on DNRC-managed lands in the cumulative-effects analysis area. Within the cumulative effects analysis area, the Beaver/Swift/Skyles and Lupfer #3 timber sale projects are altering 4.7 acres of riparian fisher habitats and an additional 696 acres of upland fisher habitats.

## *Environmental Effects*

**Direct and Indirect Effects of the No-Action Alternative on Fishers**

No changes to fisher habitats would be anticipated under this alternative. Human disturbance and potential trapping mortality should not change from current levels. No changes in landscape connectivity would occur. Thus, no direct and indirect effects to fisher would be anticipated since: 1) no changes to existing habitats would be anticipated; 2) landscape connectivity would not be altered; and 3) no changes to human access or potential for trapping mortality would be anticipated.

**Direct and Indirect Effects of the Action Alternative on Fishers**

No changes to the existing riparian habitats would be anticipated; negligible changes to a small amount of upland fisher habitats would be possible with the trail construction and maintenance. No changes in open roads would be anticipated, but some additional non-motorized human access is possible which would not likely alter trapping pressure and the potential for fisher mortality. No appreciable changes in landscape connectivity would be expected despite the increased human presence in those upland fisher habitats. Thus, negligible adverse direct and indirect effects to fisher would be anticipated since: 1) negligible changes to upland fisher habitats and no changes to riparian habitats would be anticipated; 2) no appreciable changes to landscape connectivity would occur; 3) no changes in motorized human access levels would be anticipated that could alter fisher survival.

**Cumulative Effects of the No-Action Alternative on Fishers**

No changes to fisher habitats would be anticipated. No changes to landscape connectivity would occur. Road access within the cumulative-effects analysis area would not change; therefore, fisher vulnerability to trapping would remain unchanged. Fisher habitats could be altered with the ongoing timber harvesting. Thus, no further cumulative effects to fishers would be anticipated since: 1) no changes to existing habitats on state ownership would occur; 2) landscape connectivity afforded by the stands on state ownership would not appreciably change; and 3) no changes to human access or the potential for trapping mortality would be anticipated.

**Cumulative Effects of the Action Alternative on Fishers**

Negligible further changes to fisher habitats would be anticipated. No appreciable changes to landscape connectivity would occur. Road access within the cumulative-effects analysis area would not change; therefore, fisher vulnerability to trapping would remain unchanged despite the potential for increased levels of non-motorized

human access. Fisher habitats could be altered with the ongoing timber harvesting. Thus, negligible cumulative effects to fishers would be anticipated since: 1) negligible changes to existing upland habitats on state ownership would occur; 2) landscape connectivity would not appreciably change; and 3) no changes to motorized human access or the potential for trapping mortality would be anticipated.

## Pileated Woodpecker

**Issue:** The proposed trail construction, maintenance, use, and associated activities could alter potential habitats for pileated woodpeckers and/or increase disturbance to pileated woodpeckers.

### *Introduction*

Pileated woodpeckers play an important ecological role by excavating cavities that are used in subsequent years by many other species of birds and mammals. Pileated woodpeckers excavate the largest cavities of any woodpecker. Preferred nest trees are western larch, ponderosa pine, cottonwood, and quaking aspen, usually 20 inches dbh and larger. Pileated woodpeckers primarily eat carpenter ants, which inhabit large downed logs, stumps, and snags. *Aney and McClelland* (*1985*) described pileated nesting habitat as..."stands of 50 to 100 contiguous acres, generally below 5,000 feet in elevation with basal areas of 100 to 125 square feet per acre and a relatively closed canopy." The feeding and nesting habitat requirements, including large snags or decayed trees for nesting and downed wood for feeding, closely tie these woodpeckers to mature forests with late-successional characteristics. The density of pileated woodpeckers is positively correlated with the amount of dead and/or dying wood in a stand (*McClelland 1979*).

### *Analysis Area*

Direct and indirect effects were analyzed on the project area. Cumulative effects were analyzed on the contiguous Stillwater State Forest. This scale includes enough area to support many pairs of pileated woodpeckers (*Bull and Jackson 1995*).

### *Analysis Methods*

To assess potential pileated woodpecker nesting habitats on DNRC-managed lands in the cumulative-effects analysis area, SLI data were used to identify sawtimber stands with more than 100 square feet basal area per acre, older than 100 years old, had greater than 40 percent canopy closure, and occurring below 5,000 feet in elevation. Foraging habitats are areas that do not meet the definition above, but include the remaining sawtimber stands below 5,000 feet in elevation with greater than 40 percent canopy cover. Direct, indirect, and cumulative effects were analyzed using a combination of field evaluation, aerial-photograph interpretation, and these mapped potential habitats. Factors considered included the level of human disturbance and the amount of potential habitat.

### *Existing Environment*

In the project area, potential pileated woodpecker nesting habitat exists on approximately 1,487 acres that are dominated by western larch/Douglas-fir. Additionally, 814 acres of sawtimber stands dominated by western larch/Douglas-fir exist in the project area that may be lower-quality foraging stands. Although nesting habitat is defined differently than foraging habitat, nesting habitat also provides foraging opportunities for pileated woodpeckers. Pileated woodpeckers, numerous feeding sites and other large cavities along with and 0 to 2 variably spaced, large (>14 in dbh) snags per acre were detected in the project area.

Potential pileated woodpecker nesting habitat exists on approximately 19,021 acres of the cumulative effects analysis area, with at least an additional 48,185 acres of sawtimber-sized stands that may be suitable foraging habitats. Similar to the project area, these nesting habitats are dominated by western larch/Douglas-fir and mixed

conifers, with a larger percentage of subalpine fir. Past timber-harvesting activity has reduced the quality of habitat for pileated woodpeckers in the cumulative-effects analysis area. Portions of the cumulative-effects analysis area have been harvested in the recent past, reducing pileated woodpecker habitats. However, in the more recent past, stands have been managed for mature western larch and western white pine, snags, and snag-recruit trees, which benefit pileated woodpeckers in the long-term. In the cumulative-effects analysis area, moderate levels of human disturbance- largely from the use of open roads, general recreation, and any ongoing harvesting could be affecting individual pileated woodpeckers, but widespread population-level disturbances are not present. Ongoing harvesting associated with the Duck-to-Dog, Chicken-Antice, Olney Urban Interface, Beaver/Swift/Skyles, Southeast Stryker Ridge, Lupfer #3, and Swedish Chicken timber sale projects would continue reducing pileated woodpecker habitats.

## *Environmental Effects*

**Direct and Indirect Effects of the No-Action Alternative on Pileated Woodpeckers**

No disturbance of pileated woodpeckers would occur. No changes to existing habitats would occur. Thus, no adverse direct or indirect effects to pileated woodpeckers in the project area would be expected since: 1) no modifications to existing habitats would occur; and 2) no changes in human disturbance levels would be anticipated.

**Direct and Indirect Effects of the Action Alternative on Pileated Woodpeckers**

Pileated woodpeckers tend to be tolerant of human activities (*Bull and Jackson 1995*), but might be temporarily displaced by the construction, maintenance, and use of the trail. Increased disturbance and displacement along the corridor could reduce the likelihood of use by pileated woodpeckers. However, habitats along portions of the trail would be thinned with the Beaver/Swift/Skyles timber sale project and are experiencing a reduction in quality with those activities. Minor amounts of pileated woodpecker habitats may be removed with the construction and the development of the various amenities at the trailheads. No other modifications to existing pileated woodpecker habitats would be anticipated. Thus, minor direct and indirect effects to pileated woodpeckers would be anticipated since: 1) no changes to existing habitats would be anticipated, and future habitat quality would not be appreciably altered; and 2) elevated human disturbance levels could further discourage use by pileated woodpeckers.

**Cumulative Effects of the No-Action Alternative on Pileated Woodpeckers**

No further disturbance of pileated woodpeckers would occur. Disturbance associated with ongoing timber management would continue to disturb pileated woodpeckers on DNRC-managed lands. Portions of that disturbance would occur during the winter, which should have fewer direct disturbance effects to pileated woodpeckers. No further changes to pileated habitats on DNRC-managed lands would occur. Thus, no adverse cumulative to pileated woodpeckers would be expected since: 1) no further changes to existing habitats would occur; and 2) no changes in human disturbance levels would be anticipated.

**Cumulative Effects of the Action Alternative on Pileated Woodpeckers**

Elevated human disturbance in the cumulative-effects analysis area would be additive to disturbance associated with the ongoing timber management projects on DNRC managed lands as well as any disturbance from the use of the open roads and general recreational use of the area. Negligible further changes to pileated habitats on DNRC-managed lands in the cumulative-effects analysis area would occur beside the ongoing modifications. Thus, minor adverse cumulative to pileated woodpeckers would be anticipated since: 1) negligible changes to existing habitats would occur; and 2) increases in human disturbance levels would be anticipated.

## Big game winter range

**Issue:** The proposed trail construction, maintenance, use, and associated activities could disturb big game species and/or alter the effectiveness of their habitats.

### *Introduction*

Winter ranges enable big game survival by minimizing the effects of severe winter weather conditions. Winter ranges tend to be relatively small areas that support large numbers of big game, which are widely distributed during the remainder of the year. These winter ranges have adequate midstory and overstory to reduce wind velocity and intercept snow. The effect is that temperatures are moderated and snow depths are lowered, which enables big game movement and access to forage with less energy expenditure than in areas with deeper snow and colder temperatures. Snow depths differentially affect big game; white-tailed deer are most affected, followed by mule deer, elk, and then moose.

#### Analysis Area

Direct and indirect effects were analyzed on the project area. Cumulative effects were analyzed on the 17,834-acre cumulative-effects analysis area defined in the grizzly bear section. This area includes enough winter range to support hundreds of big game animals.

#### Analysis Methods

Effects were evaluated using a combination of field evaluation, aerial-photograph interpretation, and GIS analysis. Factors considered in this cumulative-effects analysis area include acres of winter range harvested and level of human disturbance and development.

### *Existing Environment*

Montana Department of Fish, Wildlife, and Parks identified white-tailed deer (3,836 acres), mule deer (1,280 acres), elk (640 acres), and moose (3,836 acres) winter ranges in the project area. These winter ranges are part of much larger winter ranges. Winter snow depths and suitable microclimates influence big game distribution and use in the vicinity. Douglas-fir/western larch stands in the project area are being thinned with the Beaver/Swift/Skyles Timber Sale Project, which are resulting in overall marginal thermal cover and snow intercept for big game where harvesting is occurring. Proximity to human developments and open roads has likely also reduced the capacity of the winter range in the project area. Evidence of use by deer and elk during all seasons was noted throughout the project area during field visits.

Presently, several stands across the cumulative-effects analysis area are providing thermal cover and snow intercept for big game. However, a portion of the winter range has been harvested in the recent past, reducing thermal cover and snow intercept. Numerous stands in the project area are being thinned with the Beaver/Swift/Skyles and Lupfer #3 timber sale projects, which are resulting in overall marginal thermal cover and snow intercept for big game where harvesting is occurring. Human disturbance in the winter range includes residential development, agricultural clearing, open roads, outdoor recreation (including snowmobile use, snowshoeing, skiing), and commercial timber harvesting, all of which likely influences wintering big game populations and their habitats.

### *Environmental Effects*

#### Direct and Indirect Effects of the No-Action Alternative on Big Game Winter Range

No disturbance or displacement would be anticipated in the project area. No further changes to big game thermal cover in the project area would be anticipated. Thus, no direct or indirect effects to big game winter range would

be anticipated since: 1) no changes to existing winter range would occur; and 2) no changes in human disturbance levels would be anticipated.

**Direct and Indirect Effects of the Action Alternative on Big Game Winter Range**

Construction and maintenance of the trail would likely occur during the summer, and not disturb or displace wintering big game; however, use of the trail during all seasons could disturb and/or displace wintering big game in the area during the winter period. Mitigations to encourage dog owners to control their pets would reduce the disturbance to wintering big game. No appreciable changes to existing thermal cover and snow intercept capabilities would be anticipated with the trail construction and the development of the various amenities at the trailheads. Thus, minor adverse direct or indirect effects to big game would be expected since: 1) elevated human use could increase disturbance and displacement of big game, which could alter big game use of the project area; and 2) no appreciable changes to existing winter range habitat attributes would occur.

**Cumulative Effects of the No-Action Alternative on Big Game Winter Range**

No changes would be anticipated in thermal cover and snow intercept. No further changes in human disturbance levels would be anticipated. Continued use of the winter range would be expected. Ongoing and past losses of habitats as well as ongoing disturbance/displacement factors would continue to influence wintering big game in the cumulative effects analysis area. Thus, no adverse cumulative effects to big game winter range would be anticipated since: 1) no changes to existing winter range would occur; and 2) no changes in human disturbance levels would be anticipated.

**Cumulative Effects of the Action Alternative on Big Game Winter Range**

Displacement and disturbance of wintering big game associated with this alternative would be additive to disturbance and displacement associated with the ongoing commercial harvesting and human use of the cumulative effects analysis area during the winter. Wintering big game that are displaced from the project area would be expected to move into less suitable portions of the winter range, thereby increasing energetic costs to the wintering big game. No appreciable changes to existing thermal cover or snow intercept would occur with the proposed trail construction and the development of the various amenities at the trailheads; ongoing and past losses of habitats as well as ongoing disturbance/displacement factors would continue to influence wintering big game in the cumulative effects analysis area. Collectively, the quality of the winter range would be further reduced and the carrying capacity of the winter range would continue to decline. Continued winter use of the larger winter range would be expected. Thus, minor adverse cumulative effects to big game winter range would be expected since: 1) elevated human disturbance levels could disturb and displace wintering big game; and 2) no appreciable changes to winter range attributes would be expected.

## Suggested Mitigation Measures

- Provide for education of users (at trailheads and during encounters along the trail) about ways to reduce effects to wildlife, including information about not feeding wildlife, packing out litter, and keeping a safe distance from wildlife.
- Encourage dog owners to control their dogs on the trail corridor to limit the disturbance to wildlife species and minimizing the fragmentation of wildlife habitats.
- Eliminate unnatural food sources by ensuring litter is removed. Should containers be provided for litter, use wildlife/bear resistant trash receptacles.

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